

ESTIMATION THE FACTORS, MAKE THE GREATEST INFLUENCE ON RELIABILITY PARAMETRES OF A GTD DISK WITH A GLANCE SUDDEN FAILURES

© 2009 A. I. Belousov, A. V. Gritsin

Samara State Aerospace University

In this work the methodology of an estimation of parameters of reliability GTD with a glance sudden failures is presented. By this methodology the analysis of influence of the limit of the geometrical sizes, rotating frequency and disk material density on failure rate is carried out.

Reliability, failure rate, reliability parameter, turbine disk, finite element method

Belousov Anatoliy Ivanovich, doctor of technical sciences, professor of department of the Construction and designing of the aircraft engines of Samara State Aerospace University. E-mail: aibelousov@mail.ru. Area of research: dynamics and durability, reliability of the aircraft and rocket engines, construction of the rocket engines.

Gritsin Aleksey Valerevich, engineer-designer, postgraduate student of Samara State Aerospace University. E-mail: grialeksey@gmail.com. Area of research: reliability of the aircraft and rocket engines.

References

1. Belousov A.I., Birger I.A. Strength reliability of turbomachine parts: Tutorial. – Kuybyshev: KuAI, 1983. - 75 pages.

2. Kostochkin V.V. Reliability of aircraft engines and power plants: Tutorial for students. – Moscow: Mashinostroyeniye (Machine building), 1976.-248 pages.

3. Akimov E.M. Fundamentals of reliability of gas turbine engines: Tutorial for student of machine building specialty. – Moscow: Mashinostroyeniye (Machine building), 1981.-207 pages.

4. Skubachevskiy G.S. Aircraft gas turbine engines. Construction and calculation parts: Tu-

torial for students of aircraft institute of higher education – Moscow: Mashinostroyeniye (Machine building), 1974. – 520 pages.

5. Probabilistic characteristics of aircraft materials strength and range sizes: Reference book. Edited by S.O. Ohapkina – Moscow: Mashinostroyeniye (Machine building), 1970. – 568 pages.

6. Belousov A.I., Gritsin A.V. Estimation strength reliability parameters of aircraft engine units on the design stage: Tutorial. – Samara:SSAU, 2006 – 115 pages.